GREEN RIVER ACTION PLAN: YAMPA AND LITTLE SNAKE RIVERS

li -					FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	OUT-	
		ACTIVITY	WHO	STATUS	10/05-9/06						YEARS	
	l.	PROVIDE AND PROTECT INSTREAM FLOWS (HABITAT MANAGEMENT)										
	I.A.	Basin-wide activities										
	I.A.1.	Identify fish habitat and flow needs										
	I.A.1.a.	Complete Phase II feasibility study.	CRWCD/ CWCB/BR	Complete	nplete Hydrosphere 1995.							
	I.A.1.b.	Revise and update estimates of basin water needs.	CRWCD/FWS	Complete	BBC 1998.							
	I.A.1.c.	Evaluate and recommend low flow and passage needs (also relates to restoration of fish passage, if needed Recovery Element II).	CDOW/FWS/ CRWCD	Complete	Modde et al. 1999.							
	I.A.1.d.	Provide hydrology support to develop and evaluate flow augmentation alternatives.	CWCB	Complete	CWCB prov	ided CRDSS	model runs to	ater supply a	Iternatives ir			
	I.A.1.e.	Report synthesizing the results of water demand, low flow recommendations and hydrologic analyses.	FWS	Complete	Ayres 1999.							
	I.A.1.f.	Install, operate, and/or maintain stream flowmonitoring gages.	FWS	Ongoing	Х	Х	Х	Х	Х	Х	Х	
	I.A.1.g.	Install, operate, and/or maintain sediment monitoring gages.		Complete	Final report	1/05.			•	•		
	I.A.2.	Develop and implement Yampa River management plan.			Roehm 2004	4.						
	I.A.2.a.	Negotiate a Cooperative agreement to implement the Yampa River management plan.	Program	Complete								
	1.4.0 (4)	Develop a biological assessment for the management plan; initiate intra-Service Section 7	FIAGO	0 1.								
	I.A.2.a.(1)	consultation based on the Service intent to enter into the Cooperative Agreement. Complete intra-Service consultation, resulting in a programmatic biological opinion (PBO) for the	FWS	Complete								
	I.A.2.a.(1)a I.A.2.a.(2)	Yampa Basin. Fulfill NEPA requirements for the management plan.	FWS FWS	Complete Complete	January 10, September 2							
	I.A.Z.a.(Z)	i uniii ise. A requiremento foi trie management pian.	FWS/Program/	Complete	oepterriber 2	LUU4.						
	I.A.2.b.	Sign Cooperative Agreement to implement the management plan.	Colorado/ CRWCD	Complete	January 2005.							
	I.A.3.	Develop public involvement plan.	FWS/CDOW	Complete	SOW FY 96	and forward.						
	I.A.3.a	Implement public involvement plan.	FWS/CDOW	Complete								
	I.A.4.	Evaluate and revise as needed flow regimes to benefit endangered fish populations.	FWS/Program	Ongoing	Х	Х	Х	Х	Х	Х	Х	
	I.B.	Yampa River above the Little Snake River										
	I.B.1	Initially identify year-round flows needed for recovery.	FWS-FR	Complete	Modde and	Modde and Smith 1995.						
	I.B.2	Provide augmentation of low flows.										
	I.B.2.a	Identify and acquire water source(s).										
	I.B.2.a.(1)	Steamboat Lake.										
	I.B.2.a.(1)(a)	Change decree.	CDPOR	Complete 5/97	Done in 199	17.						
>*	I.B.2.a.(1)(b)	Lease up to 2,000 af. to augment late summer flows. (Future use of Steamboat Lake Water not anticipated after water available from enlarged Elkhead Reservoir.)	FWS-WR	Ongoing/ TBD	Х							
	I.B.2.a.(1)(c)	Quantify transit losses.	CWCB	Complete	Done in 200	0.						
	I.B.2.a.(2)	Identify and evaluate water supply alternatives for up to 7,000 af of stream flow augmentation.	Program	Complete	Roehm 2003.							
	I.B.2.a.(2)(a)	Complete all necessary administrative, legal, environmental compliance, institutional and financial arrangements needed for development of Elkhead Reservoir enlargement.										
	I.B.2.a.(2)(a)i)	Complete environmental compliance.	CRWCD	Complete								
	I.B.2.a.(2)(a)ii)	Complete funding agreement.	CRWCD/CWCB	Complete								
	I.B.2.a.(2)(a)iii)	Construct	CRWCD	Ongoing	X	12/06	<u> </u>					
>*	I.B.2.a.(2)(b)	Deliver water for endangered fish.	Program	Pending		Х	Х	Х	X	X	Х	
	I.B.3.	Evaluate need for instream flow water rights.										
	I.B.3.a	Review scientific basis.	CWCB/CDOW	Complete		Modde et al.						
	I.B.3.b	Assess legal and physical availability of water.	CWCB	Complete	as the basis	Colorado completed work on a water availability study in early 1995 & the work was used as the basis of the allocation of compact water between the five subbasins. Colorado completed work on a water availability study in early 1995 & the work was used as the basis of the allocation of compact water between the five subbasins.						
	I.B.3.c	Assess compact considerations.	CWCB	Complete								
	I.B.3.d	Five-year periodic review of progress under the PBO to determine if instream flow filings are necessary.	CWCB/FWS	Pending				Х	Х		Х	
	I.B.3.d.(1)	If necessary, evaluate how identified flows will be legally protected.	CWCB	Pending				Х	Х		Х	
	I.C.	Little Snake River (Colorado and Wyoming)										
	I.C.1.	Evaluate importance of Little Snake to endangered fishes and develop management action plan. (Determine if habitat exists to protect under Colorado's instream flow program.)	BR/LFL	Complete	Hawkins et	al. 2001; Haw	kins and O'B	rien 2001.				
	I.C.2.	Initially identify year-round flows needed for recovery (needed).										
	I.C.2.a.	Develop work plan.	BR/LFL	Complete	Hawkins et al. 2001; Hawkins and O'Brien 2001.							
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	I.C.2.b. I.C.3.	Identify flows. Evaluate need for instream flow water rights.	FWS-WR	Pending	9/06							

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I.D.2.d. Five-year periodic review of progress under the PBO to determine if instream flow filings are necessary. I.D.2.d.(1) If necessary, evaluate how identified flows will be legally protected. II. RESTORE HABITAT (HABITAT DEVELOPMENT AND MAINTENANCE) III.A. Yampa River from Dinosaur National Monument to Craig. Colorado Restore native fish passage at instream barriers and reduce impacts of maintaining diversion	9/10 10/10-9/11 Y rrly 1995 & the work wa five subbasins. rly 1995 & the work wa five subbasins. (see 2001 RIPRAP					
I.C.3.b. Assess legal and physical availability of water. CWCB Complete Colorado completed work on a water availability study in ea as the basis of the allocation of compact water between the safe basis of the allocation of compact water be	five subbasins. rly 1995 & the work wa five subbasins. (see 2001 RIPRAP	was used				
I.C.3.C. Assess legal and physical availability of water. CWCB Complete as the basis of the allocation of compact water between the	five subbasins. rly 1995 & the work wa five subbasins. (see 2001 RIPRAP	was used				
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I.C.3.d.(1) If necessary, evaluate now identified flows will be legally protected. Wyoming Pending X X X	(see 2001 RIPRAP	X				
I.D. Yampa River below Little Snake River I.D. Initially identify year-round flows needed for recovery. I.D.1.a. Modify based on revisions to environmental baseline. FWS-FR Complete Modde and Smith 1995. Modde and Smith 1995. I.D.1.b. Update flow recommendations to include flows from the Little Snake River. FWS Complete Roehm 2004. I.D.2.a. Review scientific basis. CWCB/CDOW Complete Colorado completed work on a water availability study in ea as the basis of the allocation of compact water between the I.D.2.d. Five-year periodic review of progress under the PBO to determine if instream flow filings are necessary. I.D.2.d.(1) If necessary, evaluate how identified flows will be legally protected. I.D.2.d. Restore native fish passage at instream barriers and reduce impacts of maintaining diversion I.D.2.d. Restore native fish passage at instream barriers and reduce impacts of maintaining diversion I.D.2.d. Restore native fish passage at instream barriers and reduce impacts of maintaining diversion III.A. Yampa River from Dinosaur National Monument to Craig, Colorado III.A. Restore native fish passage at instream barriers and reduce impacts of maintaining diversion III.A. Yampa River from Dinosaur National Monument to Craig, Colorado III.A. Yampa River from Dinosaur National Monument to Craig, Colorado III.A. Yampa River from Dinosaur National Monument to Craig, Colorado III.A. Yampa River from Dinosaur National Monument to Craig, Colorado III.A. Yampa River from Dinosaur National Monument to Craig, Colorado III.A. Yampa River from Dinosaur National Monument to Craig, Colorado III.A. Yampa River from Dinosaur National Monument to Craig, Colorado III.A. Yampa River from Dinosaur National Monument to Craig, Colorado III.A. Yampa River from Dinosaur National Monument to Craig, Colorado III.A. Yampa River from Dinosaur National Monument to Craig, Colorado III.A. Yampa River from Dinosaur National Monument to	rly 1995 & the work wa					
I.D.1. Initially identify year-round flows needed for recovery. I.D.1.a. Modify based on revisions to environmental baseline. I.D.1.b. Update flow recommendations to include flows from the Little Snake River. I.D.2. Evaluate need for instream flow water rights. I.D.2.a. Review scientific basis. I.D.2.b. Assess legal and physical availability of water. I.D.2.c. Assess compact considerations. I.D.2.d. Five-year periodic review of progress under the PBO to determine if instream flow fillings are necessary. I.D.2.d.(1) If necessary, evaluate how identified flows will be legally protected. I.D.2.d. Restore native fish passage at instream Maintenance instream barriers and reduce impacts of maintaining diversion FWS-WR Complete Modde and Smith 1995. Complete Complete Work on a water availability study in ear as the basis of the allocation of compact water between the Colorado completed work on a water availability study in ear as the basis of the allocation of compact water between the Colorado completed work on a water availability study in ear as the basis of the allocation of compact water between the Colorado completed work on a water availability study in ear as the basis of the allocation of compact water between the Colorado completed work on a water availability study in ear as the basis of the allocation of compact water between the Colorado completed work on a water availability study in ear as the basis of the allocation of compact water between the Colorado completed work on a water availability study in ear as the basis of the allocation of compact water between the Colorado completed work on a water availability study in ear as the basis of the allocation of compact water between the Colorado completed work on a water availability study in ear as the basis of the allocation of compact water between the Colorado completed work on a water variability study in ear as the basis of the allocation of comp	five subbasins					
I.D.1.a. Modify based on revisions to environmental baseline. FWS-WR Complete Modde and Smith 1995.	five subbasins					
I.D.1.b. Update flow recommendations to include flows from the Little Snake River. FWS Complete Roehm 2004.	five subbasins					
I.D.2. Evaluate need for instream flow water rights. CWCB/CDOW Complete	five subbasins					
I.D.2.a. Review scientific basis. CWCB/CDOW Complete Colorado complete work on a water availability study in east he basis of the allocation of compact water between the Colorado completed work on a water availability study in east he basis of the allocation of compact water between the Colorado completed work on a water availability study in east he basis of the allocation of compact water between the Colorado completed work on a water availability study in east he basis of the allocation of compact water between the Richard Colorado completed work on a water availability study in east he basis of the allocation of compact water between the necessary. I.D.2.d. Five-year periodic review of progress under the PBO to determine if instream flow filings are necessary. CWCB/FWS Pending X X X X X X X X X	five subbasins					
I.D.2.b. Assess legal and physical availability of water. CWCB Complete Colorado completed work on a water availability study in ea as the basis of the allocation of compact water between the Colorado completed work on a water availability study in ea as the basis of the allocation of compact water between the Colorado completed work on a water availability study in ea as the basis of the allocation of compact water between the PLD.2.d. Five-year periodic review of progress under the PBO to determine if instream flow filings are necessary. I.D.2.d.(1) If necessary, evaluate how identified flows will be legally protected. CWCB Pending X X X II. RESTORE HABITAT (HABITAT DEVELOPMENT AND MAINTENANCE) II.A. Yampa River from Dinosaur National Monument to Craig, Colorado Restore native fish passage at instream barriers and reduce impacts of maintaining diversion	five subbasins					
I.D.2.b. Assess legal and physical availability of water. I.D.2.c. Assess compact considerations. CWCB Complete as the basis of the allocation of compact water between the Colorado completed work on a water availability study in ear as the basis of the allocation of compact water between the Colorado completed work on a water availability study in ear as the basis of the allocation of compact water between the CWCB/FWS Pending I.D.2.d. Five-year periodic review of progress under the PBO to determine if instream flow filings are necessary. I.D.2.d.(1) If necessary, evaluate how identified flows will be legally protected. II. RESTORE HABITAT (HABITAT DEVELOPMENT AND MAINTENANCE) III. RESTORE HABITAT (HABITAT DEVELOPMENT AND MAINTENANCE) III.A. Yampa River from Dinosaur National Monument to Craig, Colorado Restore native fish passage at instream barriers and reduce impacts of maintaining diversion	five subbasins	W00 H00				
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II. RESTORE HABITAT (HABITAT DEVELOPMENT AND MAINTENANCE) II.A. Yampa River from Dinosaur National Monument to Craig, Colorado II.A.1 Restore native fish passage at instream barriers and reduce impacts of maintaining diversion		X				
II.A. Yampa River from Dinosaur National Monument to Craig. Colorado II.A.1 Restore native fish passage at instream barriers and reduce impacts of maintaining diversion		Х				
Restore native fish passage at instream barriers and reduce impacts of maintaining diversion						
structures.						
II.A.1.a. Inventory potential barriers. CRWCD Complete Hydrosphere 1995.						
II.A.1.b. Determine threshold (passage) flows between Craig and Dinosaur National Monument (low- flow dependent). CDOW/FWS Complete Modde et al. 1999.	Modde et al. 1999.					
II.A.1.c. Develop guidelines to facilitate fish passage at new diversion structures. PD/FWS-ES Complete Roehm 2003.						
II.A.2. Reduce/eliminate entrainment of Colorado pikeminnow at diversion structures.						
II.A.2.a. Identify and evaluate existing diversion structures for entrainment of Colorado pikeminnow PD/FWS-ES Ongoing X X X X X X	X	X				
>* II.A.2.b. Develop and implement remedial measures, as necessary, to reduce or eliminate entrainment. PD/CDOW/FWS Ongoing X X X X X X X X X	Х	Х				
II.A.2.c. Develop guidelines to reduce or eliminate entrainment at new diversion structures, if necessary. PD/CDOW/ FWS Complete Roehm 2003.	Roehm 2003.					
II.A.3. Review NPS/USGS report to assess potential for negative impacts of elevated pH to endangered fish. Program Complete PD's office reviewed Chafin 2002 and agreed elevated pH is	PD's office reviewed Chafin 2002 and agreed elevated pH is a sampling artifact.					
II.B. Green River from Ouray to Jensen, Utah (see Green River Action Plan)						
II.B.1 Acquire interest in high-priority flooded bottomland habitats between Ouray NWR and Jensen to benefit endangered fish (see Green River Action Plan : Mainstem II.A.2.)						
II.B.2. Implement levee removal strategy at high-priority sites (see Green River Action Plan : Mainstem II.A.3.).						
REDUCE NEGATIVE IMPACTS OF NONNATIVE FISHES AND SPORTFISH MANAGEMENT ACTIVITIES (NONNATIVE AND SPORTFISH MANAGEMENT)						
Develop aquatic management plan (Colorado) to reduce nonnative fish impacts while providing III.A. sportfishing opportunities (also relates to nonnative fish management/control Recovery Element III). CDOW due for CDOW 1998.						
Implement Yampa Basin aquatic wildlife management plan to develop nonnative fish control programs in reaches of the Yampa River occupied by the endangered fishes. Each control activity will be evaluated for effectiveness and then continued as needed. See III.A.2.c.1.& 2. under General Recovery Program Support Action Plan.	х	Х				
III.A.1.a. Identify potential conflicts between present fisheries management in existing Elkhead Reservoir and endangered fishes and formulate alternative management plan.						
III.A.1.a.(1) Evaluate nonnative fish escapement and control options at Elkhead Reservoir (during and after FWS-FR/ Ongoing X X CPOW Ongoing X X CPOW C						
Elkhead expansion construction). See Miller et al. 2005.	Х	Х				
Fikhead expansion construction). See Miller et al. 2005. CDOW See Miller et al. 2005.	^					
Elknead expansion construction). See Miller et al. 2005. See Miller et al. 2005. CDOW	^					

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		ACTIVITY WHO	STATUS	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	OUT-	
<u> </u>					10/05-9/06	10/06-9/07	10/07-9/08	10/08-9/09	10/09-9/10	10/10-9/11	YEARS
	III.A.1.b.(2)	Reduce northern pike reproduction in the Yampa River.									
	III.A.1.b.(2)(a)	Identify and evaluate natural and artificial spawning/nursery habitats for northern pike in the Yampa River for exclusion devices.	CDOW	Complete	Hill 2004.						
>*	III.A.1.b.(2)(b)	Implement remedial measures to reduce pike reproduction in Yampa River.	CDOW	On hold							i
	III.A.1.b.(2)(c	Develop guidelines for new structures to minimize creation of habitat suitable for pike spawning/nursery.	CDOW	On hold							
	III.A.1.b.(3)	Identify sources of northern pike and implement remedial measures as needed.	CDOW	Ongoing	Х	Х					1
	III.A.1.c.	Control channel catfish									
>*	III.A.1.c.(1)	Remove channel catfish in Yampa Canyon.	FWS	Ongoing	Х	Х					
>*	III.A.1.c.(2)	Remove and translocate channel catfish above Yampa Canyon.	CDOW	On hold							
>*	III.A.1.d.	Remove and translocate smallmouth bass.	CDOW	Ongoing	Х	Х					
	III.A.1.e.	Remove bag and possession limits on warmwater nonnative sportfishes within critical habitat in Colorado.	CDOW	Complete	In Colorado fishing regulations.						
	IV.	MANAGE GENETIC INTEGRITY AND AUGMENT OR RESTORE POPULATIONS (STOCKING ENDANGERED FISHES)									
	IV.A.	Yampa River in Dinosaur National Monument									
	IV.A.1.	Augment or restore populations as needed, and as guided by the Genetics Mgmt. Plan.									
	IV.A.1.a.	Develop integrated stocking plan for bonytail in the Yampa River.	CDOW	Complete	Nesler et al. 2003						
>	IV.A.1.a.(1)	Implement stocking plan.	FWS/CDOW	Ongoing	Х	Х	Х	X	Х	X	X
	IV.A.1.b.	Evaluate stocking success as identified in monitoring plan for stocked fish.	LFL/FWS/ States/PD	Ongoing	Х	Х	Х	Х	Х	Х	Х
	v.	MONITOR POPULATIONS AND HABITAT AND CONDUCT RESEARCH TO SUPPORT RECOVERY ACTIONS (RESEARCH, MONITORING, AND DATA MANAGEMENT)									
	V.A.	Conduct population estimate for humpback chub. (Sampling occurs in September and October, overlapping fiscal years. Report due 12/05, sampling may begin again in the fall of 2007.)	FWS	Ongoing		Х	Х			Х	х